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Hiroshi Okagawa

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KATTEN MUCHIN ROSENMAN LLP  
575 MADISON AVENUE  
NEW YORK, NY 10022-2585

EXAMINER

LIU, BEN H

ART UNIT

PAPER NUMBER

2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,481	<b>Applicant(s)</b> OKAGAWA ET AL.	
	<b>Examiner</b> BEN H. LIU	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This is in response to an amendment/response filed on May 15, 2008.
2. Claims 2, 4, 9, 11, and 13 have been amended.
3. Claim 1 has been cancelled.
4. No claims have been added.
5. Claims 2-14 are currently pending.

### ***Claim Objections***

6. Claims 2-3 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, dependent claims 2-3 are objected because they do not refer to a preceding claim. Instead, they depend on subsequent claim 4.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 2-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Walker et al. (U.S. Patent 6,278,709).

**For claim 2**, Walker et al. disclose a packet transfer path control apparatus further comprising: a unicast packet management information storage unit storing for each output port management information including a storage position in said packet data storage unit of the data of each unicast packet to be output through the output port and output order identification information for the unicast packet; and a multicast packet management information storage unit provided for each output port and storing, for each of the multicast packets to be output through the output port, management information including a storage position in said packet data storage unit of the data of the multicast packet and output order identification information of the multicast packet (*see column 9 lines 25-43 and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*).

**For claim 3**, Walker et al. disclose a packet transfer path control apparatus wherein said packet output unit for each output port compares output order identification information about a next output unicast candidate of packets whose packet management information is stored in said unicast packet management information storage unit with output order identification information about a next output multicast candidate of packets whose packet management information is stored in said multicast packet management information storage unit, and determining a packet to be output next from the output port (*see column 16 lines 9-18, which recite using a sequence number for transmitting packets in sequence*).

**For independent claim 4**, Walker et al. disclose a packet transfer path control apparatus which controls a transfer of a unicast packet and a multicast packet, comprising: an output port determination unit determining an output port through which a packet input from any of one or more input ports is to be output (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*), and

assigning output order identification information for designation of an output order of the packet, the output order of the packet indicating an input order of the packet among a plurality of input packets (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*) including both the unicast packet and the multicast packet and indicating whether the unicast packet arrives earlier than the multicast packet (*see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number*);

a packet data storage unit storing data of the plurality of input packets (*see column 7 lines 57-62, which recite buffers associated with the input signals*); and

a plurality of packet output units respectively corresponding to the plurality of output ports, each packet output unit reading data of a packet determined by said output port determination unit to be output through a corresponding output port associated with the packet output unit in an output order indicated by the output order identification information from said packet data storage unit, and outputting the read data through the corresponding output port (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*);

wherein said output order identification information is aerial numbers indicating input orders of all packets input through all input ports, or a serial number indicating input orders of each output port (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*).

**For independent claim 5**, Walker et al. disclose packet transfer path control apparatus which controls a transfer of a unicast packet and a multicast packet, comprising: an output port determination unit determining an output port through which a packet input from any of one or more input ports is to be output (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*);

a pointer storage unit storing for each output port a pointer to a location where there is stored data of a last input one of the unicast packets to be output through the output port or packet management data for the last input unicast packet (*see column 9 lines 25-43 and column 10 lines and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*);

a packet data storage unit storing data of a plurality of input packets including both the unicast packet and the multicast packet (*see column 7 lines 57-62, which recite buffers associated with the input signals*);

a packet output unit provided for each output port, reading data of a packet determined by said output port determination unit to be output through the output port (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*) in an output order for

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guarantee of an input/output order of the unicast packet and the multicast packet based on stored contents of said pointer storage unit from said packet data storage unit (*see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number*),

the output order indicating an input order of the packet among the plurality of input packets and indicating whether the unicast packet arrives earlier than the multicast packet, and outputting the read data through the output port (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*).

**For claim 6**, Walker et al. disclose a packet transfer path control apparatus further comprising: a unicast packet management information storage unit storing for each output port management information including a storage position in said packet data storage unit of the data of each unicast packet to be output through the output port and output order identification information for the unicast packet; and a multicast packet management information storage unit provided for each output port and storing, for each of the multicast packets to be output through the output port, management information including a storage position in said packet data storage unit of the data of the multicast packet and output order identification information of the multicast packet (*see column 9 lines 25-43 and column 10 lines and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*).

**For claim 7**, Walker et al. disclose a packet transfer path control apparatus wherein the pointer points to the storage position in said packet data storage unit for data of a last input unicast packet, or a storage position of packet management information

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corresponding to the unicast packet in said unicast packet management information storage unit (*see column 9 lines 25-43 and column 10 lines and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*).

**For claim 8**, Walker et al. disclose a packet transfer path control apparatus wherein the packet output unit for each output port storing the storage position in said unicast packet management information storage unit of packet management information for the unicast packet output immediately before from the output port, comparing, when a next packet is to be output through the output port, the value of the pointer to a next output candidate of multicast packets whose packet management information is stored in said multicast packet management information storage unit with the storage position, and outputting a multicast packet when the value match the storage position or outputting a unicast packet when the value does not match the storage position (*see column 16 lines 9-18, which recite using a sequence number for transmitting packets in sequence*).

**For independent claim 9**, Walker et al. disclose a computer-readable recording medium having recorded thereon a computer-executable program, the program used to direct a computer to control a transfer of a unicast packet and a multicast packet, comprising: a procedure of determining one of output ports through which one a packet input through an input port is to be output (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*);

a procedure of, if the input packet is a unicast packet to be output through the one output port, writing, for the one output port, order identification information assigned for the unicast packet in a table storing for each output port the management information



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about each unicast packet to be output thorough the output port (*see column 9 lines 16-33, which recite storing header information including the sequence number in the ROM 102, RAM 104, and look-up table 106*), the order identification information being assigned to all packets to be output through all of the output ports or all packets to be output through each port in to input order (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*); and

a procedure of, if the input packet is a multicast packet to be output through the one output port, writing order identification information assigned for the multicast packet in a table provided for the one output port and storing the management information about each multicast packet to be output through the one output port (*see column 9 lines 16-33, which recite storing header information including the sequence number in the ROM 102, RAM 104, and look-up table 106*), the order identification information being assigned to all packets to be output through all of the output ports or all packets to be output through each port in to input order (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*);

wherein an output order of the packet indicating an input order of the packet among a plurality of input packets (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite checking the sequence of received packets using a successive checksum as a sequence number*) including both the unicast packet and the multicast packet and indicating whether the unicast packet arrives earlier than the multicast packet

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*(see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number).*

**For claim 10**, Walker et al. disclose a computer-readable recording medium having recorded thereon a computer-executable program, the program used to direct a computer to control a transfer of a unicast packet and a multicast packet, comprising a procedure of reading order identification information about the unicast packet to be output next from a table storing unicast packet management information corresponding to an output port, and reading order identification information about the multicast packet to be output next from a table storing multicast packet management information; and a procedure of comparing the two read values of order identification information, and determining which packet is to be output next through the output port, the unicast packet or the multicast packet *(see column 16 lines 9-18, which recite using a sequence number for transmitting packets in sequence).*

**For independent claim 11**, Walker et al. disclose a computer-readable recording medium having recorded thereon a computer-executable program, the program used to direct a computer to control a transfer of a unicast packet and a multicast packet, comprising: a procedure of determining one of a plurality of output ports through which a packet input through an input port is to be output *(see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs);*

a procedure of, when the input packet is the unicast packet, storing for the one output port a storage address in a table storing management information about the input packet or a storage address in a table storing data of the plurality of input packets

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including both the unicast packet and the multicast packet (*see column 9 lines 25-43 and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*); and

a procedure of, when the packet is the multicast packet, writing in a table storing management information about the multicast packet for each output port through which the packet is to be output a storage address in a table storing management information about the unicast packet stored corresponding to the one output port or a storage address in a table storing the data of the packet (*see column 9 lines 25-43 and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*);

wherein an output order of the packet indicates the input order of the packet among the plurality of input packets (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite checking the sequence of received packets using a successive checksum as a sequence number*) and indicates whether the unicast packet arrives earlier than the multicast packet (*see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number*).

**For claim 12**, Walker et al. disclose a computer-readable recording medium having recorded thereon a computer-executable program, the program used to direct a computer to control a transfer of a unicast packet and a multicast packet, comprising further comprising a procedure of reading a storage address in a table storing management information about the unicast packet corresponding to the multicast packet to be next output, or a storage address in a table storing data of the unicast packet from a table storing management information about a multicast packet for each output port; a

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procedure of comparing the read storage address in a table storing management information about the unicast packet or a storage address in a table storing data of the unicast packet with a storage address in a table storing management information about the last output unicast packet or the storage address in a table storing the data of the packet, and determining which is to be output from the output port, the unicast packet or the multicast packet (*see column 16 lines 9-18, which recite using a sequence number for transmitting packets in sequence*); and a procedure of, when the unicast packet is output, storing a storage address in a table storing management information about the unicast packet to be output or a storage address in a table storing data of the packet (*see column 9 lines 25-43 and column 10 lines and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports*).

**For independent claim 13**, Walker et al. disclose a packet transfer path control apparatus which controls a transfer of a unicast packet and a multicast packet, comprising: output port determination means for determining an output port through which a packet input from any of one or more input ports is to be output (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*), and assigning output order identification information for designation of an output order of the packet (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*) including both the unicast packet and the multicast packet and indicating whether the unicast packet arrives earlier than the multicast packet (*see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number*);

packet data storage means for storing data of the plurality of input packets (*see column 7 lines 57-62, which recite buffers associated with the input signals*); and

packet output means respectively corresponding to the plurality of output ports, each packet output unit reading data of a packet determined by said output port determination unit to be output through a corresponding output port associated with the packet output unit in an output order indicated by the output order identification information from said packet data storage unit, and outputting the read data through the output port (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*);

wherein said output order identification information is aerial numbers indicating input orders of all packets input through all input ports, or a serial number indicating input orders of each output port (*see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using*).

**For independent claim 14**, Walker et al. disclose a packet transfer path control apparatus which controls a transfer of a unicast packet and a multicast packet, comprising: output port determination means for determining an output port through which a packet input from any of one or more input ports is to be output (*see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs*);

pointer storage means for storing for each output port a pointer to a last input one of unicast packets to be output through the output port, or packet management information about the last input unicast packet (*see column 9 lines 25-43 and column 10*

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*lines and column 10 lines 5-25, which recite a look-up table 100 that uses a memory address to refer to the output ports);*

packet data storage means for storing data of a plurality of input packets including both the unicast packet and the multicast packet *(see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number);*

a plurality of packet output means provided for a plurality of output ports for reading data of a packet determined by said output port determination means to be output through the output port *(see column 3 lines 27-33 and figure 5, which recite a control logic 96 that routes packets received on its inputs to one or more of its outputs) in an output order for guarantee of an input/output order of the unicast packet and the multicast packet based on stored contents of said pointer storage means from said packet data storage means (see column 3 lines 27-33, which recite routing both unicast and multicast packets that both use the sequence number),*

the output order indicating an input order of the packet among the plurality of input packets and indicating whether the unicast packet arrives earlier than the multicast packet, and outputting the read data through the output port *(see column 15 lines 2-5, column 16 lines 3-6, and figures 9-10, which recite a successive checksum as a sequence number used for checking the sequence of received packets using).*

### ***Response to Arguments***

9. Applicant's arguments with respect to claim 2-14 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BEN H. LIU whose telephone number is (571)270-3118. The examiner can normally be reached on 9:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chi H Pham/  
Supervisory Patent Examiner, Art Unit  
2616  
8/18/08

BL